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| EXAMINER |
|---|
| VOLPER, THOMAS E |

| ART UNIT | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/409,922 | Applicant(s) BAIRD ET AL. | |
|---|---|---|---|
| | Examiner Thomas Volper | Art Unit 2697 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 10, 11, 17, 20,22 and 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft).

- Regarding claims 1, 2, 10, 20, 22 and 28-31, Ong discloses an architecture for the transport of signaling information related to Switched Circuit Network (SCN) signaling protocols over IP. Ong discloses that signaling transport shall be used for transporting SCN signaling between a Signaling Gateway Unit and a Media Gateway Controller Unit (1.3, 2nd paragraph). Figure 1: Sigtran Functional Model demonstrates an exemplary architecture of the claimed invention. In this embodiment, the Media Gateway (MG) represents the media endpoint controlled by the media gateway controller. Ong also discloses that the Signaling Gateway terminates an SS7 link of an SCN and transfers the signaling information to the MGC using signaling transport (2.2, 2nd paragraph). The RTP stream represents one of the packet-switched bearer streams of the present invention. Ong fails to disclose communicating the signaling

information over a number of sessions smaller than the plurality of terminated connections from the SG to the MGC. Ong also fails to disclose a plurality of packet switched bearer streams. Auerbach (Session Manager) defines a session as a "physical" connection between a MGC and a gateway (1.1, 1st paragraph). In the introduction (1.) Auerbach includes Signaling Gateways in the more generic category of gateways. Auerbach defines channels as a physical termination of a signaling line, and a path as being defined by a protocol family and consisting of one or more channels. A path uses a session or session group. In addition, multiple paths between the same MGC and gateway can share the same sessions (1.1, paragraphs 4 and 5). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use one or more sessions to communicate the signaling information between the SG and MGC of Ong. It also would have been obvious to route more than packet switched bearer stream to the media endpoint. One of ordinary skill in the art would have been motivated to do this in order to maintain multiple connections between a given SG and MGC and to increase availability of the gateway. One would route a plurality of packet switched bearer streams to a media endpoint to support multiple applications simultaneously.

- Regarding claim 3, Ong discloses that once the MGC receives the transported signaling it performs call processing on this signaling (2.3, 1st paragraph).

- Regarding claim 4, Ong discloses that the MGC handles registration and management of resources at the MG (1.2, paragraph 5) and the MG controls an interswitch trunk based on control signaling received from the MGC (2.2, 2nd paragraph).

- Regarding claims 5 and 32, see paragraph regarding claims 1, 2, 10, 20, 22 and 28-31. The teaching provide therein meets all the limitations of claims 5 and 32, except multiple media

gateways and multiple signaling gateways. Ong discloses multiple media gateways each with its own signaling gateway function (see Fig. 3). This covers the limitations of the MGC controlling multiple media endpoints and communicating with multiple signaling gateways.

- Regarding claim 6, Fig. 3 of Ong shows different media streams being routed to two different media gateways.

- Regarding claims 11 and 35, Ong shows multiple media gateway units comprising media gateways and signaling gateway functions (Fig. 3). As previously established, the media gateway represents a media endpoint.

- Regarding claims 17, 33 and 34, Ong fails to expressly disclose a failover media gateway controller. Auerbach (Session Manager) discloses that in a redundant configuration, a gateway is connected to an ACTIVE MGC and one or more STANDBY MGC's (3.5, 1st paragraph). The signaling application can change the ACTIVE/ STANDBY state at any time (3.5.1, 2nd paragraph), which is effectively switching MGC's. The gateway side accepts PDU messages only from the ACTIVE MGC, but may send to both ACTIVE and STANDBY MGC's (3.5.2, 2nd paragraph). This provides for sending state information to the STANDBY, or failover, MGC. There is no need for transmission of state information between the MGC's because the Session Manager handles the switchover function. Auerbach et al. (Session Manager) discloses that the session management layer provides a mechanism for notification of ACTIVE/ STANDBY state of server, or MGC (2.0, 3rd paragraph). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide this STANDBY MGC function in the framework of Ong. One of ordinary skill in the art would have

been motivated to do this in order to provide highly reliable commercial application of signaling transport.

3. Claims 7-9 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, IETF Internet Draft, June 1999) in view of Auerbach et al. (Session Manager, IETF Internet Draft, 25 February 1999) as applied to claims 1-6, 10, 11, 17, 20-22, 28-31 above, and further in view of Christie, IV (US 6,445,695).

- Regarding claims 7-9, the teaching provided by Ong et al. in view of Auerbach et al. (Session Manager) meets all of the limitations of claims 7-9 except for a media proxy that modifies the format of packet-switched bearer streams before forwarding them to a media gateway. Christie, IV discloses a terminal proxy 150 and a terminal adapter/ gateway 140. The terminal adapter/ gateway 140 represents the media gateway of the present invention. Christie, IV also discloses a network server 170, which in this description represents the MGC. Justification for this interpretation is found in Auerbach (Session Manager) (2.0, 1st paragraph) whereby the MGC is referred to as a server. In Christie, IV, the terminal adapter/ gateway 140 communicates with the terminal proxy 150 using UNISTIM IP while the terminal proxy communicates with the network server 170 via a subset of the Q.931 protocol (col. 5, lines 24-28). In this manner, the terminal proxy acts as a signaling translator. In effect, the terminal proxy is forwarding modified signaling to the terminal adapter/ gateway, which represents the media gateway of the present invention. Christie, IV also discloses that IP telephony networks and existing telephony networks must be made compatible with each other. This necessitates network interfaces capable of converting between IP standards and protocols and existing

standards and protocols (col. 1, line 40 – col. 2, line 5). Call state information, bearer connections, and calling services are handled in the terminal proxy, rather than at the terminal (col. 6, 4-6). This suggests that not only does the proxy convert between signaling protocols, but also may modify bearer connections. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the terminal proxy of Christie, IV on behalf of the media endpoint in the system provided by the teaching of Ong et al. in view of Auerbach et al. (Session Manager). One of ordinary skill in the art would have been motivated to do this to provide call processing services for a less capable terminal, or endpoint, such as an IP phone.

- Regarding claim 37, it would be obvious to include both media proxies and media gateways as endpoints in order to support both less capable terminals in need of a proxy to provide call processing, and more complicated terminals capable of managing their own call state.

4. Claims 12-16, 23-27 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft) as applied to claims 1-6, 10 and 11 above, and further in view of Auerbach et al. (Signaling Backhaul Protocol, 25 February 1999, IETF Internet Draft).

- Regarding claims 12 and 27, the teaching provided by Ong et al. in view of Auerbach et al. (Session Manager) provides all the limitations of claim 1, upon which claim 12 depends. In addition, Ong discloses that the signaling transport shall support the ability to multiplex higher layer SCN sessions on one underlying signaling transport sessions (4., paragraph 5). Ong also

discloses transport of native SCN protocol messages over a packet switched network, and that a variety of SCN protocol types may be supported (4., 1st paragraph). Ong fails to expressly disclose that the signaling information for a particular native protocol is parsed into protocol data units at the signaling gateway. Auerbach (Signaling Backhaul Protocol) discloses that among the criteria for signaling protocol delivery between a gateway and MGC is the ability to multiplex protocol data units (PDU's) from multiple protocols. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to parse, or multiplex, the signaling content into PDU's identifiable with a particular connection and native transport protocol in order to provide interoperability of the IP network with a variety of SCN networks.

- Regarding claims 13, 15, 23 and 36, the aforementioned teaching of Ong et al. in view of Auerbach et al. (Session Manager) provides all of the limitations of claims 1 and 12, but fails to expressly disclose that the backhaul protocol for transporting the signaling protocol is TCP. TCP is well known in the art and a common protocol for transporting IP traffic in a packet network. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use TCP as the backhaul protocol in the architecture of Ong. One of ordinary skill in the art would have been motivated to do this because TCP is widely used and would allow for easy adaptation of existing packet networks that use TCP to support signaling transport of SCN connections.

- Regarding claims 14, 16 and 26 the aforementioned teaching of Ong et al. in view of Auerbach et al. (Session Manager) provides all of the limitations of claims 1 and 12, but fails to expressly disclose that the backhaul protocol for transporting the signaling protocol is UDP. With respect to claim 26, the previous paragraph regarding claims 13, 15, 23 and 36 covers the

limitation of TCP as a backhaul protocol. Auerbach (Signaling Backhaul Protocol) makes a recommendation to use Reliable UDP (RUDP) (1.1, 3rd paragraph), which is a species of UDP. At the time the invention was made one of ordinary skill in the art it would have been obvious to use RUDP as the backhaul protocol in the architecture of Ong. One of ordinary skill in the art would have been motivated to do this because it is a fast and reliable protocol.

- Regarding claims 24 and 25, the previous two paragraphs regarding claims 13, 15, 23 and 36, and claims 14, 16 and 26 cover the limitations of using TCP and UDP as a backhaul protocol. The teaching provided by Ong et al. in view of Auerbach et al. (Session Manager) fails to expressly disclose using SCTP as a backhaul protocol. However, Ong et al. (Architectural Framework for Signaling Transport) provides the basis for SCTP, even though the term SCTP is not used explicitly. It is thus obvious to use SCTP because the signaling transport method described in Ong et al. is essentially a framework for SCTP.

5. Claims 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong et al. (Framework Architecture for Signaling Transport, June 1999, IETF Internet Draft) in view of Auerbach et al. (Session Manager, 25 February 1999, IETF Internet Draft) as applied to claims 1-6, 10, 11, 17, 20-22, 28-31 above, and further in view of Draft H.323, 30 January 1996, Telecommunication Standardization Sector of ITU (ITU-T).

- Regarding claims 18 and 19, the aforementioned teaching of Ong et al. in view of Auerbach et al. (Session Manager) provides for all of the limitations of claims 18 and 19 except for routing an audio stream and a video stream associated with the audio stream to the media endpoint. H.323 describes services for multimedia communication over Local Area Network

(LAN), which are packet-based, and H.323 terminals may support real-time voice, data and video, or any combination, including videotelephony (page ii, 1st paragraph). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to route audio and video streams to the media endpoint if the endpoint were an H.323 terminal. One of ordinary skill in the art would have been motivated to do this because H.323 is an established standard in the art and a commercially successful application of the signaling transport of the present invention would need to support H.323 devices.

- Regarding claim 21, Ong discloses Q.931 signaling in Figure 4: Q.931 Transport Model. Ong fails to disclose H.225 RAS connections and H.245 connections. Draft H.323 describes the operation of the H.245 control function and RAS signaling function in sections 6.2.8 and 6.2.9, respectively. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include H.245 and H.225 RAS connections in addition to the Q.931 signaling in Ong. One of ordinary skill in the art would have been motivated to do this in order to support an H.323 endpoint.

### *Response to Arguments*

6. Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

7. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo, can be reached at 703-305-4798. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

tev

April 10, 2003

RICKY NGO
PRIMARY EXAMINER